

**COMPOSITE HEALTH CARE SYSTEM  
AND  
MEDICAL RECORD RETRIEVAL SYSTEM  
INTERFACE CONTROL DOCUMENT**

**REVISION A**

**D/SIDDOMS II**



**DO 0032, CHCS Special Projects, FY99**

**Delivery Item 16a**

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## **1. SCOPE**

This Interface Control Document (ICD) specifies the common interface from the Composite Health Care System (CHCS) to the systems used by MEDICAL RECORD RETRIEVAL SYSTEMs (MRRS). Upon formal approval by the CHCS Project Office, this ICD is incorporated in the CHCS requirements baseline.

### **1.1 System Identification**

This paragraph identifies the systems participating in the interface, the contractors who are developing the systems and the responsible Government Project Office.

#### **1.1.1 Composite Health Care System (CHCS)**

The Composite Health Care System (CHCS) is an automated information system supporting the administration and delivery of health care at Department of Defense medical treatment facilities throughout the world. It is developed by the Science Applications International Corporation in support of:

Composite Health Care Systems Project Office  
Five Skyline, Suite #810  
5111 Leesburg Pike  
Falls Church, VA 22041-3206

The interface specified in this ICD will be implemented in CHCS Version V4.603.

#### **1.1.2 Medical Record Retrieval System (MRRS) Systems**

The Medical Record Retrieval System (MRRS) is an automated information system supporting the physical storage and retrieval of patient records from the National Patient Record Center (NPRC). The system receives input from CHCS at specified Medical Treatment Facilities, as well as shipments of the physical records specified in the input from CHCS. The MRRS is developed by:

National Personnel Records Center  
St. Louis, MO

## **1.2 Document Overview**

The purpose of this ICD is to specify interface requirements to be met by the participating systems. It describes the concept of operations for the interface, defines the message structure and protocols, which govern the interchange of data, and identifies the communication paths along which the data is expected to flow. The document is organized as follows:

- Section 1. Scope,
- Section 2. Concept of Operations,
- Section 3. Message Specifications,
- Section 4. Communication Requirements for ASCII File Interfaces, and
- Section 5. Verification.

## **1.3 Applicable Documents**

The following documents are applicable to the extent referenced in this specification:

- (1) Privacy Act of 1974 and Department of Defense Privacy Program, DOD 5400.11-R.
- (2) Department of Defense Freedom of Information Act (FOIA) Program, DOD 5400.7-R.

## **2. CONCEPT OF OPERATIONS**

The operational objective of this interface is to ensure that an electronic index is available for every medical treatment record retired and transferred to the NPRC.

### **2.1 System Overviews**

The following paragraphs describe the functionality and architecture of the participating systems. They briefly summarize each system, placing special emphasis on functionality related to the interface and identify key hardware and software components of each system.

#### **2.1.1 Composite Health Care System (CHCS) Overview**

The Composite Health Care System (CHCS) is an automated medical information system that supports the administration and delivery of health care in Department of Defense (DOD) medical treatment facilities (MTFs). These MTFs include hospitals, outlying medical clinics and selected outlying dental clinics. CHCS provides integrated information services in support of patient care. The Patient Administration (PAD) subsystem of CHCS provides registration, admission, discharge, and transfer functions. Medical record coding and bed management is also supported. The Clinical, Pharmacy, Radiology and Laboratory subsystems provide order entry, order management and results reporting functionality. The Patient Administration subsystem supports medical record creation and tracking.

CHCS is implemented in a terminal/host architecture. Sites generally dedicate one node to background processing (printing, external interfaces, etc.) and allocate the remaining nodes to user functionality. The standard user interface is via a VT-420 terminal or terminal emulator. The local area network connecting users to the host cluster is not dedicated to CHCS traffic. CHCS supports interfaces to a variety of external systems. An individual CHCS site may support one or more facilities.

#### **2.1.2 MRRS System Overview**

The Medical Record Registry System (MRRS) is a centralized database maintaining an index of physical patient records that are retired from use at MTFs and shipped for storage to facilities in St Louis, MO. The database supports the abilities of remote users to locate and request hardcopies of specific records. The database is populated with information contained in the ASCII files submitted electronically from the MTFs.

In order to receive and process ASCII data transfers from the CHCS, MRRS systems must be

FTP-capable and able to parse the ASCII files.

## **2.2 Functional Allocation**

Record retirement information generated on CHCS will be made available to the MRRS. The MRRS will use the data from CHCS for record retrieval.

## **2.3 Interface Transactions**

CHCS provides medical record data to the MRRS via ASCII formatted files. The ASCII files are created and transmitted as a result of user action.

### **2.3.1 Data Generation**

CHCS provides indices of retired medical records and a summary report of the indices created for shipment to the MRRS System via formatted ASCII files. The CHCS system provides the user the capability to create, edit and print a Record Index file by adding records, deleting records and editing records. The CHCS system provides the user the capability to create, edit and print a Shipment Data file. The user may delete a record index and a shipment data file prior to creation of the ASCII files for transmission. The Record Index and the Shipment Data file will be transferred to the NPRC.

Table 2-1 identifies the files provided to the MRRS System and indicates the supported methods of creation and modification.

**Table 2-1. MRRS System Files**

<b>File</b>	<b>Automated Data Generation</b>	<b>Manual Editing</b>
Record Index File	Yes	Yes
Shipment Data File	Yes	Yes

## **2.4 Data Transfer**

CHCS transmits ASCII data files to the MRRS via file transfer protocol (FTP). Lower level connectivity is provided via a Defense Information System Network (DISN) or other commercial Wide Area Network (WAN) connection. CHCS compresses outgoing files via GZIP when the compression mode has been set for a specified file type. For files that are both encrypted and compressed, the files are first compressed and then encrypted on CHCS prior to transfer to the MRRS system. Specific communication requirements are itemized in Section 4.

## **2.5 Security and Integrity**

The interface between CHCS and the MRRS System is used to send and receive Sensitive but Unclassified (SBU) information such as patient social security numbers, appointment data, diagnoses and procedures. The data from the interface is subject to the provisions of the Privacy Act of 1974 and DOD Privacy Program, Department of Defense 5400.11-R. Additionally, MRRS system data falls within the content of the Exemption Number 6 of the Department of Defense Freedom of Information Act (FOIA) Program, DOD 5400.7-R. Both the DOD Privacy and FOIA programs mandate adequate data protection.

Unauthorized creation, disclosure, modification, or destruction of this data could cause potential harm to patient health and privacy. Military Health Services System (MHSS) security policy requires that patient-sensitive data be transmitted only over dedicated lines or in encrypted format. CHCS encrypts outgoing files using the Data Encryption Standard (DES) algorithm when a file encryption key has been defined on CHCS for a specified file type.



### **3. MESSAGE SPECIFICATIONS**

CHCS and the MRRS System communicate via ASCII files. This section explicitly specifies the required content of each file and the circumstances under which records are appended to it. Section 4.0 specifies the requirements necessary to transfer the files from CHCS to the MRRS System.

#### **3.1 File Requirements**

The following paragraphs specify the requirements for CHCS to prepare files for future transfer to the MRRS System. The format of the individual files is defined in paragraph 3.2.

##### **3.1.1 Data Generation**

CHCS enables authorized Managed Record Management (MRM) Supervisors and other users who have been granted the appropriate permissions to perform initial data generation for and editing of the files for the MRRS System.

##### **Requirements:**

- (1) On trigger, User Selects generate records index based on date of Last Patient Activity for Inpatient record types; CHCS shall generate the following file:
  - (a) Record Index File.
- (2) On trigger, User selects generate records index based on date of Last Patient Activity for Outpatient record types CHCS shall create the following initialization file:
  - (a) Record Index File.
- (3) On trigger, User Selects generate records index based on date of last Patient Activity for Fetal Monitoring Strip record types, CHCS shall generate the following file:
  - (a) Record Index File.
- (4) On trigger, User Selects generate records index based on date of last Patient Activity for Dental record types CHCS shall generate the following file:
  - (a) Record Index File.
- (5) On trigger, User Selects generate records index based on date of last Patient Activity for Mental Health record types, CHCS generate the following file:
  - (a) Record Index File.

- (6) On trigger, User Selects generate records index based on date of last Patient Activity for Family Advocacy record types, CHCS shall generate the following file:
  - (a) Record Index File.
- (7) On trigger, User Selects generate records index based on date of last Patient Activity for Ambulatory Patient Visit (APV) record types, CHCS shall generate the following file:
  - (a) Record Index File.
- (8) On trigger, User Selects generate Shipment Data file, CHCS shall generate the following file:
  - (a) Shipment Data File.

### **3.1.2 Data Editing**

Once the CHCS has generated the Record Index and Shipment Data Files, authorized CHCS users may edit the contents of either file.

#### **Requirements:**

- (1) Provide the user the capability to add new entries the record index.
- (2) Provide the user the capability to remove entries of ineligible records from the record index.
- (3) Provide the user capability to edit file containing shipment data.
- (4) Provide the user capability to delete a record index file.
- (5) Provide the user capability to delete a shipment data file.
- (6) Provide the user capability to assign box number each record on record index file.
- (7) Provide the user capability to create ASCII version of the record index file.
- (8) Provide the user capability to create ASCII version of the shipment data file.
- (9) Provide the user capability to encrypt and transmit ASCII record index file using FTP.
- (10) Provide the user capability to encrypt and transmit ASCII shipment data file using FTP.

## 3.2 File Definitions

The following paragraphs define the segments and data elements that comprise the above-specified messages:

- 3.2.1 **Requirements for Files** specifies the records included in each message in paragraph 3.1.
- 3.2.2 **Requirements for Records** specifies the fields included in each record in paragraph 3.2.1.
- 3.2.3 **Requirements for Data Types** defines the data types used in the fields specified in Paragraph 3.2.2.

### 3.2.1 Requirements for Files

The MRRS Interface file is the atomic unit of data transferred from CHCS to the MRRS Systems. Neither the Record Index File nor the Shipment Data File has a header record.

The Record Index File consists of multiple homogeneous, fixed-length data records.

The Shipment Data File consists of 6 different records, the 6<sup>th</sup> record can repeat multiple times. The data records specified in paragraph 3.2.2 bear the same name as the MRRS Interface files shown in Table 3-1.

**Table 3-1. MRRS Interface Files**

Number	Name
1.	Record Index Record 1 – Occurs Multiple Times Table 3.3
2.	Shipment Data Record 1 – Occurs once in each Shipment Data file: Table 3.4 Record 2 - Occurs once in each Shipment Data file: Table 3.5 Record 3 - Occurs once in each Shipment Data file: Table 3.6 Record 4 - Occurs once in each Shipment Data file: Table 3.7 Record 5 - Occurs once in each Shipment Data file: Table 3.8 Record 6 – Occurs multiple times in Shipment Data file: Table 3.9

### 3.2.2 Requirements for Data Records

Table 3-2 gives the characteristics for usage of the data fields in each record.

**Table 3-2. Record Attribute Table Format**

Seq	Field Name	Length	Data Type	Field Description
1				
2				

<i>Sequence (SEQ)</i>	Ordinal position (sequence) of the data field within the record.
<i>Field Name</i>	Globally unique descriptive name for the field.
<i>Length</i>	Fixed Field Length.
<i>Data Type</i>	Restrictions on the contents of the data field. Data Types are defined in paragraph 3.2.3.
<i>Field Description</i>	Brief description of the field contents.

Table 3-3 through 3-9 use the Record Attribute Tables to specify the data fields in each record.

**Table 3-3. Record Index File – Record 1**

Seq	Field Name	Length	Data Type	Field Description
1	Sponsor SSN	9	Numeric	999999999 – No “-“
2	Patient Family Member Prefix (FMP)	2	Text	99
3	Last Date of Treatment	8	Text	YYYYMMDD
4	Patient Name	30	Text	LastName,FirstName MI
5	Patient Birth Date	8	Text	YYYYMMDD
6	Record Type	30	Text	INPATIENT : IN OUTPATIENT : OP FETAL MONITORING STRIPS : FM DENTAL : DN MENTAL HEALTH : MH FAMILY ADVOCACY : FA AMBULATORY PATIENT VISIT : AM SUBSTANCE ABUSE : SA SOCIAL WORK : SW
7	DMIS ID	4	Text	DOD Standard DMIS ID Table
8	Division	30	Text	Site Specific
9	Branch of Service	45	Text	DOD Standard Table
10	Patient Category	35	Text	DOD Standard Table
11	Patient SSN	9	Numeric	999999999 – No “-“
12	Record Internal Entry	9	Numeric	Unique record identifier at each site

Seq	Field Name	Length	Data Type	Field Description
13	Volume Number	2	Numeric	Number of folders for this patient
14	Box Number	7	Numeric	Number of boxes in this shipment
15	Space	29	Text	Place holder
16	Filename	14	Text	Record Index File Name
17	Create Date	8	Text	YYYYMMDD
18	Carriage return character	1	Control	The ASCII character 13
19	Line Feed character	1	Control	The ASCII character 10

**Table 3-4. Shipment Data File – Record 1**

Seq	Field Name	Length	Data Type	Field Description
1	MTF POC Name	30	Text	Designated CHCS User
2	MTF POC Phone Number	18	Text	Phone of Designated CHCS User
3	MTF POC DSN Phone Number	18	Text	DSN phone of Designated CHCS User
4	MTF POC DSN FAX Number	18	Text	FAX of Designated CHCS User
5	MTF E-mail address	70	Text	E-mail of Designated CHCS User
6	Carriage return character	1	Control	The ASCII character 13
7	Line Feed character	1	Control	The ASCII character 10

**Table 3-5. Shipment Data File - Record 2**

Seq	Field Name	Length	Data Type	Field Description
1	MTF Name	45	Text	Name of facility where CHCS host system located.
2	MTF Address #1	60	Text	Address line 1
3	MTF Address #2	60	Text	Address line 2
4	MTF State	2	Text	DOD Standard Geographic Location
5	MTF City	40	Text	From USPS Zip Code Table
6	MTF Modified City	40	Text	Site defined
7	MTF Zip Code	10	Text	From USPS Zip Code Table
8	Carriage return character	1	Control	The ASCII character 13
9	Line Feed character	1	Control	The ASCII character 10

**Table 3-6. Shipment Data File – Record 3**

Seq	Field Name	Length	Data Type	Field Description
1	User Authorizing Transfer	30	Text	Designated CHCS User for file generation.
2	Transfer Authorization date	8	Date	Entered at file generation time.
3	Date of last Patient Activity	8	Date	Highest date in records generated.
4	Record Disposal Authority	17	Text	Equivalent to code used in SF135
5	Record Type Description	60	Text	Equivalent to the Series Description field on the SF 135, Records Transmittal and Receipt
6	Record Disposal Date	8	Date	The date this series of medical records will reach the end of its retention period at the NPRC. Equivalent of the Disposal Date field on the SF 135
7	Shipment Volume	7	Numeric	Number of boxes (cu ft)
8	Date Record Index Created	8	Date	System generated
9	Carriage return character	1	Control	The ASCII character 13
10	Line Feed character	1	Control	The ASCII character 10

**Table 3-7. Shipment Data File – Record 4**

Seq	Field Name	Length	Data Type	Field Description
1	Remarks	250	Text	Remarks entered by user.
2	Carriage return character	1	Control	The ASCII character 13
3	Line Feed character	1	Control	The ASCII character 10

**Table 3-8. Shipment Data File - Record 5**

Seq	Field Name	Length	Data Type	Field Description
1	Shipment Data Filename	14	Text	Name of Shipment data File. Format: XXXXYYYYYAA.S99 Where: XXXX – indicates DMIS ID YYYY – indicates Year AA – Record type S – indicates Shipment Data 99 – indicates sequence
2	Carriage return character	1	Control	The ASCII character 13
3	Line Feed character	1	Control	The ASCII character 10

**Table 3-9. Shipment Data File – Record 6**

Seq	Field Name	Length	Data Type	Field Description
1	<b>Record Index Filename</b>	14	Text	Names of Record Index files in this “shipment of data” Format: XXXXYYYYYAA.R99 Where: XXXX – indicates DMIS ID YYYY – indicates Year AA – Record Type R – indicates Records Index 99 – indicates sequence
2	Carriage return character	1	Control	The ASCII character 13
3	Line Feed character	1	Control	The ASCII character 10

### 3.2.3 Requirements for Data Types

The following Data Types are defined within this interface:

- **Text** displayable characters may take any allowable ASCII values greater than 31 decimal.

- **Date** is in the 8-character format YYYYMMDD, where MM is the month (01 - 12), DD is the day of the month (01 - 31), YYYY is the year.
- **Numeric** may not include any alphabetic or special characters. Allowable values are numeric digits 0 - 9.
- **Control** ASCII values between 0 and 31 inclusive.



## **4. COMMUNICATION REQUIREMENTS FOR ASCII FILE INTERFACES**

This section specifies the communication requirements necessary to establish and maintain communications from CHCS to MRRS. It includes requirements to be satisfied by CHCS and by MRRS.

### **4.1 Interface Initiation**

The interface between CHCS and MRRS is established via File Transfer Protocol (FTP). MRRS will establish an FTP server to which CHCS will connect as a client.

Initiation of the connection between CHCS and the MRRS system will require coordination between the administrators of each system to exchange the following parameters:

- (1) MRRS IP Address,
- (2) CHCS FTP Account Name (USERID) on MRRS,
- (3) CHCS FTP Account Password on MRRS,
- (4) MRRS Receiving Directory,
- (5) CHCS File Compression Mode,
- (6) DES File Encryption Key,
- (7) Fixed ASCII Transfer Mode,
- (8) CHCS Hours for Automatic Scheduled Transmission, and
- (9) CHCS Firewall Interface Lines (If the transfer must go through a firewall, these lines will be used to gain access through the firewall. The lines are fed to FTP in the order they are entered from CHCS, for each file exported.).

#### **Requirements:**

- (1) MRRS shall initiate the interface by establishing an FTP Server.
- (2) CHCS shall connect to the MRRS FTP Server as a Client.

### **4.2 Flow Control**

Files will be routed by CHCS to the MRRS IP Address defined for the MRRS FTP. MRRS grants FTP access to CHCS upon receipt of valid User ID and Password. CHCS transfers the files to the MRRS Receiving Directory.

The naming convention for the ASCII files that originate on CHCS embeds a functional indicator chosen from Table 4-1 in the file name.

**Table 4-1. File Naming Conventions**

File	Functional Indicator
Record Index	R
Shipment Data	S

**Requirements:**

- 1) CHCS shall name each file in accordance with the following naming convention:

XXXXAAYYYY.F99-DES

Where:

XXXX	DMIS ID (4 Characters)
YYYY	Timestamp of File Creation where YYYY is the year.
AA	Type of Record
	INPATIENT : IN
	OUTPATIENT : OP
	FETAL MONITORING STRIPS : FM
	DENTAL : DN
	MENTAL HEALTH : MH
	FAMILY ADVOCACY : FA
	AMBULATORY PATIENT VISIT : AM
	SUBSTANCE ABUSE : SA
	SOCIAL WORK : SW
F	Functional Indicator
99	Sequence Indicator
-DES	Encryption Indicator

- 2) If CHCS encrypted an MRRS file, CHCS shall include the notation -DES in the file name to indicate encryption.

## 5. VERIFICATION

This section details the methods by which compliance to each interface requirement specified in sections 3.0 and 4.0 of this document will be ensured. Qualification methods by which compliance will be ensured may include:

- a. Demonstration: The operation of interfacing entities that relies on observable functional operation not requiring the use of instrumentation, special test equipment, or subsequent analysis.
- b. Test: The operation of interfacing entities using instrumentation or special test equipment to collect data for later analysis.
- c. Analysis: The processing of accumulated data obtained from other qualification methods. Examples are reduction, interpretation, or extrapolation of test results.
- d. Inspection: The visual examination of interfacing entities, documentation, etc.
- e. Special Qualification Methods: Any special qualification methods for the interfacing entities, such as special tools, techniques, procedures, facilities, and acceptance limits.

Table 5-1 details the method by which compliance with interface requirements will be verified. Where all requirements in a paragraph or its subparagraphs have identical verification methods, only that paragraph is represented in the Verification Matrix.

**Table 5-1. Verification Matrix**

Ref	Requirements	Method	Comment
3.1.1	Data Initialization	Test	Receiving System May be Simulated
3.1.2	Active File Creation	Test	Receiving System May be Simulated
3.2.1	Requirements for Files	Analysis	
3.2.2	Requirements for Records	Analysis	
3.2.3	Requirements for Data Type	Analysis	
4.1	Interface Initiation	Test	"End-to-End" Testing Required
4.2	Flow Control	Test	"End-to-End" Testing Required
4.3	Error Management	Test	"End-to-End" Testing Required
4.4	Security Features	Test	"End-to-End" Testing Required